



SEQUENCE LISTING

<110> SHIBATA Atsuhiko

Kato, Kou

Yamada, Yasuhiro

Nihira, Takuya

Shindo, Takuya

<120> METHOD FOR INDUCTION OF GENE EXPRESSION IN PLANT AND PLANT TREATED THEREBY

<130> 5405/18

<140> 10/049,710

<141> 2002-02-15

<150> PCT/JP01/05096

<151> 2001-06-15

<150> JP 2000-180466

<151> 2000-06-15

<160> 11

<170> PatentIn version 3.1

<210> 1

<211> 699

<212> DNA

<213> Streptomyces virginiae

<220>

<221> CDS

<222> (1)..(699)

<223>

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<301> Okamoto, S., Nakamura, K., Nihira, T. and Yamada, Y.

<302> Virginiae butanolide binding protein from Streptomyces virginiae.
Evidence that VbrA is not the virginiae butanolide binding protein and re-
identification of the true binding protein

<303> Journal of Biological Chemistry

<304> 270

<305> 20

<306> 12319-12326

<307> 1995-05-19

<308> D32251

<309> 1994-07-19

<313> (1)..(699)

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<301> Okamoto, S., Nakamura, K., Nihira, T. and Yamada, Y.

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<303> Journal of Biological Chemistry

<304> 270

<305> 20

<306> 12319-12326

<307> 1995-05-19

<308> D32251

<309> 1994-07-19

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atg gca gtg cga cac gaa cgg gtg gca gtg cga cag gaa cgg gcc gtc
Met Ala Val Arg His Glu Arg Val Ala Val Arg Gln Glu Arg Ala Val
1 5 10 15

48

cgc acg cgg cag gcg atc gtg cgg gca gcc gcc tcg gtc ttc gac gag

96

Arg Thr Arg Gln Ala Ile Val Arg Ala Ala Ala Ser Val Phe Asp Glu			
20	25	30	
tac ggg ttc gag gcc aca gtg gca gag atc ctc tcg cggttccggcc tcg			144
Tyr Gly Phe Glu Ala Ala Thr Val Ala Glu Ile Leu Ser Arg Ala Ser			
35	40	45	
gtc acc aag ggc gcg atg tac ttc cac ttc gct tcc aag gaa gag ctg			192
Val Thr Lys Gly Ala Met Tyr Phe His Ala Ser Lys Glu Glu Leu			
50	55	60	
gcc cgc ggc gtg ctg gcc gag cag acc ctg cac gtg gcg gtg ccg gaa			240
Ala Arg Gly Val Leu Ala Glu Gln Thr Leu His Val Ala Val Pro Glu			
65	70	75	80
tcc ggc tcc aag gcg cag gaa ctg gta gac ctc acc atg ctg gtc gcc			288
Ser Gly Ser Lys Ala Gln Glu Leu Val Asp Leu Thr Met Leu Val Ala			
85	90	95	
cac ggc atg ctg cac gat ccg atc ctg cggttccggcc acg ccg ctc gca			336
His Gly Met Leu His Asp Pro Ile Leu Arg Ala Gly Thr Arg Leu Ala			
100	105	110	
ctg gac cag ggg gcg gtg gac ttc tcc gac gcc aac ccg ttc ggc gag			384
Leu Asp Gln Gly Ala Val Asp Phe Ser Asp Ala Asn Pro Phe Gly Glu			
115	120	125	
tgg ggc gac atc tgc gcc cag ctc ctg gcg gag gca cag gaa ccg ggg			432
Trp Gly Asp Ile Cys Ala Gln Leu Leu Ala Glu Ala Gln Glu Arg Gly			
130	135	140	
gag gtg ctt ccg cac gtg aac ccg aaa aag acc ggc gac ttc atc gtc			480
Glu Val Leu Pro His Val Asn Pro Lys Lys Thr Gly Asp Phe Ile Val			
145	150	155	160
ggc tgc ttc acc ggg ctc cag gcg gtc tcc ccgttccacc tcc gac cgc			528
Gly Cys Phe Thr Gly Leu Gln Ala Val Ser Arg Val Thr Ser Asp Arg			
165	170	175	
cag gac ctc ggc cac ccgttccacc tcc gtc atg tgg aac cac gtg ctg ccc			576
Gln Asp Leu Gly His Arg Ile Ser Val Met Trp Asn His Val Leu Pro			
180	185	190	
agc atc gtg ccg gcg tcc atg ctg acc tgg atc gaa acc ggc gag gag			624
Ser Ile Val Pro Ala Ser Met Leu Thr Trp Ile Glu Thr Gly Glu Glu			
195	200	205	
cggttccggcc gac ggg aag gtc gcg gcg gcc gag ggc gac gtc gag gag			672
Arg Ile Gly Lys Val Ala Ala Ala Glu Ala Glu Ala Ala Glu			
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gcc tcc gag gcc gac ggg tag			699
Ala Ser Glu Ala Ala Ser Asp Glu			
225	230		

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<213> Streptomyces virginiae

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Met Ala Val Arg His Glu Arg Val Ala Val Arg Gln Glu Arg Ala Val
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Arg Thr Arg Gln Ala Ile Val Arg Ala Ala Ala Ser Val Phe Asp Glu
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Tyr Gly Phe Glu Ala Ala Thr Val Ala Glu Ile Leu Ser Arg Ala Ser
35 40 45

Val Thr Lys Gly Ala Met Tyr Phe His Phe Ala Ser Lys Glu Glu Leu
50 55 60

Ala Arg Gly Val Leu Ala Glu Gln Thr Leu His Val Ala Val Pro Glu
65 70 75 80

Ser Gly Ser Lys Ala Gln Glu Leu Val Asp Leu Thr Met Leu Val Ala
85 90 95

His Gly Met Leu His Asp Pro Ile Leu Arg Ala Gly Thr Arg Leu Ala
100 105 110

Leu Asp Gln Gly Ala Val Asp Phe Ser Asp Ala Asn Pro Phe Gly Glu
115 120 125

Trp Gly Asp Ile Cys Ala Gln Leu Leu Ala Glu Ala Gln Glu Arg Gly
130 135 140

Glu Val Leu Pro His Val Asn Pro Lys Lys Thr Gly Asp Phe Ile Val
145 150 155 160

Gly Cys Phe Thr Gly Leu Gln Ala Val Ser Arg Val Thr Ser Asp Arg
165 170 175

Gln Asp Leu Gly His Arg Ile Ser Val Met Trp Asn His Val Leu Pro
180 185 190

Ser Ile Val Pro Ala Ser Met Leu Thr Trp Ile Glu Thr Gly Glu Glu
195 200 205

Arg Ile Gly Lys Val Ala Ala Ala Ala Glu Ala Ala Glu Ala Ala Glu
210 215 220

Ala Ser Glu Ala Ala Ser Asp Glu
225 230

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<212> DNA

<213> Streptomyces virginiae

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<301> Kinoshita, H., Tsuji, T., Ipposhi, H., Nihira, T. and Yamada, Y.

<302> Characterization of Binding Sequences for Butyrolactone Autoregulator Receptors in Streptomycetes

<303> Journal of Bacteriology

<304> 181

<305> 16

<306> 5075-5080

<307> 1999-08

<308> D32251

<309> 1994-07-19

<313> (1)..(26)

<300>

<301> Kinoshita, H., Tsuji, T., Ipposhi, H., Nihira, T. and Yamada, Y.

<302> Characterization of Binding Sequences for Butyrolactone Autoregulator Receptors in Streptomycetes

<303> Journal of Bacteriology

<304> 181

<305> 16

<306> 5075-5080

<307> 1999-08

<308> D32251

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<211> 110

<212> DNA

<213> Artificial sequence

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<223> Designed sequence of the CamV 35S promoter modified to contain the operator BARE-3 element just downstream of its TAT-box

<400> 4

gatatctcca ctgacgtaag ggatgacgca caatccact atccttcgca agacccttcc

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tctatataag agatacatac caaccgggttc ttttgacggg ggactctaga

110

<210> 5

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<211> 110

<212> DNA

<213> Artificial sequence

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<223> Designed sequence of the CaMV 35S promoter modified to contain the operator BARE-3 element just upstream of its TATA-box

<400> 5

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actatataag gaagttcatt tcatttggag agaacacggg ggactctaga	110

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<211> 110

<212> DNA

<213> Artificial sequence

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<223> Designed sequence of the CaMV 35S promoter modified to contain the operator BARE-3 elements just downstream and upstream of its TATA-box

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gatatctcca ctgacgtaag gcatgcgc caatcagata cataccaaacc ggttcttttg	60
actatataag agatacatac caaccgggttc ttttgacggg ggactctaga	110

<210> 7

<211> 136

<212> DNA

<213> Artificial sequence

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<223> Designed sequence of the CaMV 35S promoter modified to contain three of the operator BARE-3 elements just downstream and upstream of its TATA-box

<400> 7

gatatctcca ctgacgtaag ggatgacgca caatcagata cataccaaacc ggttcttttg 60
actatataag agatacatac caaccggttc ttttgaagat acataccaac cggttcttt 120
gacgggggac tctaga 136

<210> 8

<211> 27

<212> DNA

<213> Artificial sequence

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<223> Designed sequence of a backward primer containing the restriction enzyme BamH I recognition sequence for PCR amplification of the barA gene coding region to be cloned by cut with the enzyme

<400> 8

tagatccat aaatggcagt gcgacac 27

<210> 9

<211> 27

<212> DNA

<213> Artificial sequence

<220>

<223> Designed sequence of a forward primer containing the restriction enzyme Sac I recognition sequence for PCR amplification of the barA gene coding region to be cloned by cut with the enzyme

<400> 9

tagagctcct actcgtcgga ggccggcc 27

<210> 10

<211> 67

<212> DNA

<213> Artificial sequence

<220>

<223> Designed sequence of one of paired oligo DNAs for construction of the modified CaMV 35S promoter containing three of the operator BARE-3 elements just downstream and upstream of its TATA-box

<400> 10

cggatatatctc cactgacgta agggatgacg cacaatcaga tacataccaa ccggttcttt 60

tgactat 67

<210> 11

<211> 89

<212> DNA

<213> Artificial sequence

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<223> Designed sequence of the other of paired oligo DNAs for construction of the modified CaMV 35S promoter containing three of the operator BARE-3 elements just downstream and upstream of its TATA-box

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gctctagagt ccccccgtcaa aagaaccggt tggtatgtat cttcaaaaga accgggttgtt 60

atgtatctct tatatagtca aaagaaccg 89